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Short Communication

"*Bactricia nematodes* Kby., 1894" (Phasmida, Diapheromeridae, Diapheromerinae) is a *nomen nudum*

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Abstract

A review of published evidence indicates that *Bactricia nematodes* Kirby, 1894 is a ***nomen nudum*** because it is an unavailable name. The specimen collected during the Lund University Swedish South African Expedition and reported by this name is a male of *Bactricia bituberculata* (Schaum, 1857).

Key words: Lund University Swedish South African Expedition, nomen dubium, Phasmida, species inquirenda, stick insect

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Introduction

The Lund University Swedish South Africa Expedition (LUSSAE) of 1950–1951 resulted in a series of volumes entitled "South African Animal Life". In Volume 3, Klaus Günther reviewed the 20 specimens of stick insects that were collected on the expedition and assigned them to 10 species (Günther 1957). One male specimen (Fig. 1b) was assigned to "*Bactricia nematodes* K[ir]by., 1894" (Phasmidae, Heteronemiinae) (Günther 1957, 93). This record was apparently the source for a second, less detailed mention of *Bactricia nematodes* (Phasmatidae, Heteronemiinae) by Schoeman (1985). No other published references to *B. nematodes* are known.

Notes under the entry for *Bactricia* Kirby, 1896 on the comprehensive Phasmid Species File Online (PSFO) database (Brock et al. 2023) suggests that there is "no such species?" as *B. nematodes*, and that Schoeman (1985) makes "[r]eference to a Bactricia 'nematodes' in South Africa, clearly in error". *Bactricia nematodes* is therefore currently a *nomen dubium* and consequently a *species inquirenda*.

This study is an account of the taxonomic nomenclature, intended identification and actual identity of Günther (1957) and Schoeman's (1985) "*Bactricia nematodes*".

Nomenclature

Günther's (1957) mention of the name *Bactricia nematodes* is not associated with any description, diagnosis or illustration of the relevant specimen, so it is clearly not an attempt at an original description, for which Günther had ample

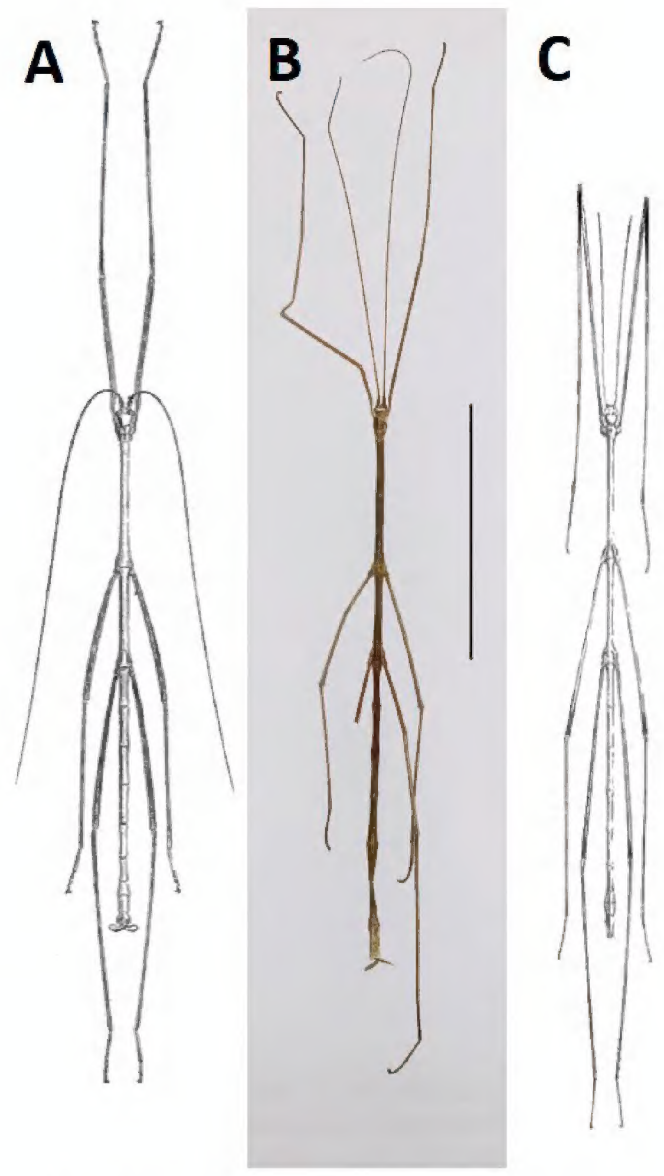

Figure 1. A Westwood's (1859: Plate V, fig. 5) illustration of *Bacteria trophinus* [sic] W. ♂ (No longer under copyright) **B** habitus of the LUSSAE specimen identified as *Bactricia nematodes*. (CC BY-NC 2.0 Deed, Lund University Biological Museum: Entomology, downloaded 12 Nov 2023, original photographs and copyright licence available at http://www.flickr.com/search/?user_id=127240649%40N08&text=Bactricia%20spp) **C** Westwood's (1859: Plate V, fig. 7) illustration of *Lonchodes nematodes* [sic] de H. ♂ (No longer under copyright; also reproduced by Delfosse (2005: 37)). Scale bar: 50 mm.

experience in publishing before 1957 (Bragg and Zompro 2007). By citing Kirby as the taxonomic author of the name, Günther implied that *B. nematodes* was not intended as a new name (unless it was by reference). He was also explicit in his introduction to his chapter that he was certain of only one new species in the LUSSAE sample, alluding to his original description of *Ramulus rubrotaeniatus* Günther, 1957 in this same publication. He illustrated this description of *R. rubrotaeniatus* and, since Günther usually illustrated his new species (Bragg and Zompro 2007), the lack of a figure of *B. nematodes* also suggests that no original description was intended in this context.

The species is also not validated by citation of the prior publication of "K[ir]by., 1894" (International Commission on Zoological Nomenclature (ICZN) 1999, Article 13.1.2) because Günther (1957) did not reference the work, none of Kirby's publications (listed on the comprehensive PSFO database) was published in 1894 and the lack of a reference for the citation disallows the detection of a misprint. The genus *Bactricia* was described two years after Günther's cited date (Kirby 1896), yet Günther (1957) did not use parentheses around the authorship of *B. nematodes* to indicate that the specific epithet had been described in another genus in 1894 and then recombined with *Bactricia* in or after 1896. A search of the PSFO database for another source of the specific epithet *nematodes* returned only *Phasma* (*Bacteria*) *nematodes* de Haan, 1842. De Haan's specific epithet has not been used elsewhere in combination with *Bactricia* Kirby, 1896 (Delfosse 2005; Brock et al. 2023) and so does not provide

an alternative source that may be validated by bibliographic reference. Kirby (1904) mentioned the epithet *nematodes* in two connections: *Phasma* (*Bacteria*) *nematodes* ♀ Haan, 1842 (and the combination *Lonchodes nematodes* ♀ Westwood) as a synonym of *Phasgania crawangensis* Haan, 1842 (Kirby 1904: 324) and *Phasma* (*Bacteria*) *nematodes* ♂ (and the combination *Lonchodes nematodes* ♂ *auct*.) as a synonym of *Baculum nematodes* ♂ Haan, 1842 (Kirby 1904: 328). Had he coined the epithet *nematodes* in 1894 or 1896, he would have mentioned that here. Nomenclaturally, "*Bactricia nematodes* Kby, 1894" is not an available name and, as such, is a *nomen nudum* (International Commission on Zoological Nomenclature (ICZN) 1999, Glossary).

Since there was no intent to describe a taxon, it seems that *Bactricia nematodes* is also a *nomen tantum* arising from misremembering the author of the genus *Bactricia* as the author of a constituent species, misremembering the publication date of Kirby's work and confusing *Ramulus nematodes* (de Haan) with another name. Bragg and Zompro (2007) discuss other *lapsus memoriae* in Günther's publications that support this inference.

Identity

This leads to the question of Günther's intended identification of the specimen. Günther (1957: 88) wrote, "… [*die*] *einzige Art* [*von Bactricia* Kby.] … *auch in der vorliegenden Ausbeute aus Transvaal enthalten ist*" [… the only species [of *Bactricia* Kirby] … is also included in the present sample from the Transvaal]. Since *Bactricia bituberculata* (Schaum, 1857) (a senior synonym of *Bacteria Trophimus* [sic] Westwood, 1859, the designated type species of *Bactricia* (see Brock (2004))) was the only valid species of *Bactricia* recognised at the time, it must be the species that he had in mind.

Phasma (*Bacteria*) *nematodes* is a large-bodied, wingless Asian species with a small head ornament (Delfosse 2005) and is, therefore, superficially physically similar to *B. bituberculata*; the two species are distinct in morphological detail and biogeography (Westwood 1859: Plate V, figs. 5, 7). Since Günther was very likely to have seen Westwood's plate (Westwood 1859: Plate V, figs. 5, 7) that meticulously illustrates the males of both *B. trophinus* (= *B. bituberculata* (see Brock (2004))) (Fig. 1A) and *R. nematodes* (Fig. 1c), it seems very unlikely that Günther intentionally referred the African specimen to de Haan's Asian species and his identification is more consistent with a nomenclatural *lapsus memoriae* involving these two species' names. Günther's (1953) *Poecilobactron* is a similar *nomen tantum*, a genus-level nomenclatural chimaera arising from misremembering *Thaumatobactron poecilosoma* Günther, 1929 (Bragg and Zompro 2007).

Finally, there is the question of the actual identity of the specimen. The LUSSAE's specimens are now housed in the Biological Museum, Lund University and the curator of the phasmids very kindly made excellent photographs of the specimen available (Figs 1B, 2). The specimen has four labels (Fig. 2a) confirming its provenance on the LUSSAE and its determination as *B. nematodes* by Klaus Günther. Morphologically, its shape, proportions and ornamentation (Fig. 1B) are practically identical to those of the males illustrated by Westwood (1859: Plate V, fig. 5), Kirby (1896: Plate XXXIX, fig. 3; redrawn in Brock (2004)) and Brunner von Wattenwyl (1907: Tab. XV, fig. 1) and consistent with the as-

Figure 2. Specimen identified as *Bactricia nematodes* **A** labels **B** abdominal terga 9 and 10, and cerci, dorsal view. Scale bar: 1 mm. (CC BY-NC 2.0 Deed, Lund University Biological Museum: Entomology, downloaded 12 Nov 2023, original photographs and copyright licence available at http://www.flickr.com/search/?user_id=127240649%40N08&text=Bactricia%20spp).

sociated descriptions. What little variation there is lies well within the current concept of this species and its four synonyms (Brock 2004). The large, flat, wide, curved cerci (Figs 1B, 2B) are especially diagnostic in Africa.

This identification is affirmed by the locality data associated with the specimen: "15 miles E Graskop, 8.5. 1951 (loc. nr. 302)" (Günther 1957). In Volume 1 of the series, Brinck and Rudebeck (1955: 95) characterise Locality 302 as, "*Fairly fast-running stream, at places forming pools with sandy and stony bottom. Shores overgrown by dense bush and tree vegetation*". The associated map (Brinck and Rudebeck 1955: Map IV) lacks geocoordinates, but overlaying it on a Google Earth Pro (http://earth.google.com) satellite image (using Pretoria, Delagoa Bay [= Maputo] and Beitbridge as landmarks) and seeking a likely stream that intercepts a tarred road suggests that the site is near 25°S, 31°E. These details place the specimen within the distribution and typical habitat of *B. bituberculata* (Fig. 3).

Finally, the obverse of the title page of the book containing Günther's chapter bears its dates of copyright and printing, both 1956, but not an explicit date of publication. ICZN Article 21.3 provides that in such a case the publication date "is the earliest day on which the work is demonstrated to be in existence as a published work". Evenhuis (2011) established that the book was received in the Lund University Library on 19 March 1957 and it is reasonable to assume that this library would have been amongst the first to obtain a copy because Lund University employed the publication's editors and housed the specimens that Günther documented. Thus, the earliest known date when this chapter and, in particular, the description of *R. rubrotaeniatus*, was "obtainable" (sensu ICZN Article 8.1.2) is 19 March 1957.

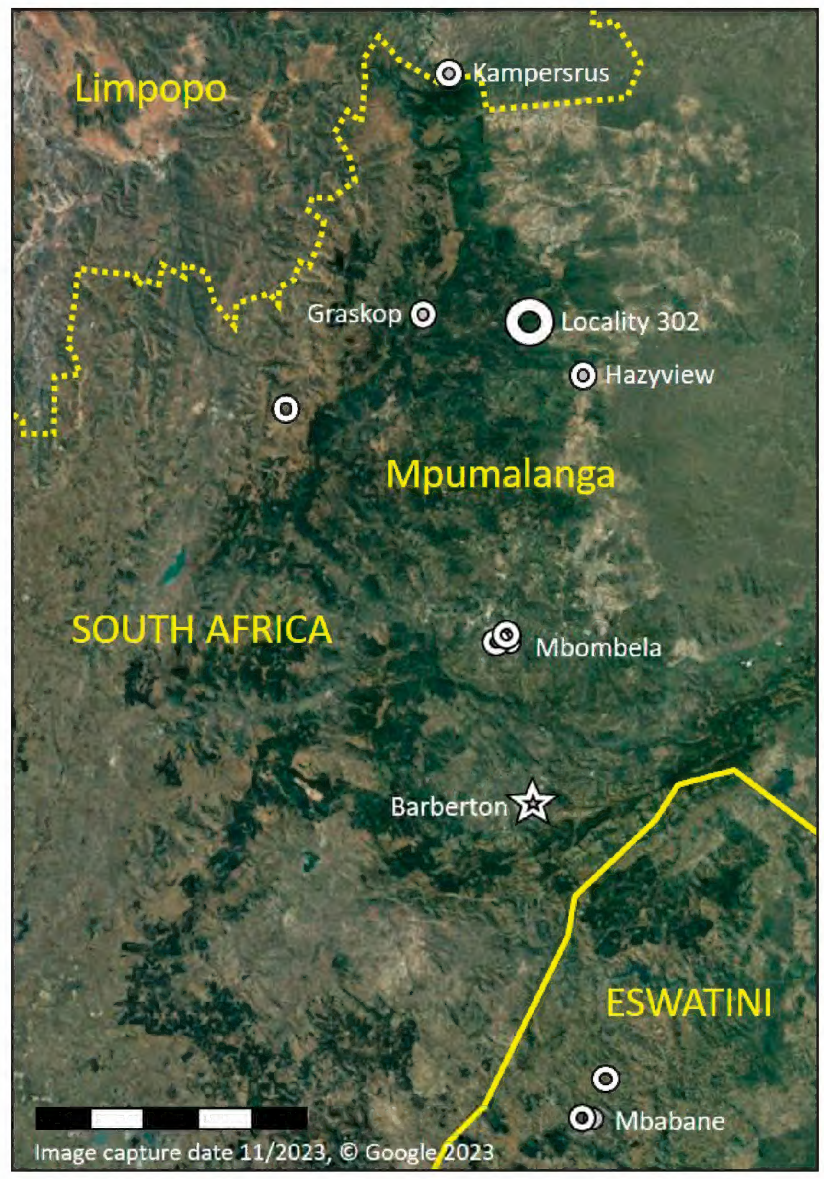

Figure 3. Location of Locality 302, the collecting site of the LUSSAE specimen attributed to *Bactricia nematodes* and neighbouring occurrences of *Bactricia bituberculata* in eSwatini and Mpumalanga and Limpopo provinces of South Africa. The dark areas are forest vegetation. ★ (white star) Type locality of *Hyrtacus carinatus* Kirby, 1902 (= *B. bituberculatus* (see Brock (2004)). Scale bar: 50 km.

Conclusion

Bactricia nematodes Kirby, 1894 is a *nomen nudum* and a *nomen tantum*. The specimen associated with this name (Fig. 1B) is a male of *Bactricia bituberculata* (Schaum, 1857).

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Additional information

Conflict of interest

The author has declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

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Author contributions

The author solely contributed to this work.

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Data availability

All of the data that support the findings of this study are available in the main text. Google Inc. made resources publicly available through Google Search (https://www.google.com/) and Google Earth (https://earth.google.com/). Photographs of the Lund University Swedish South African Expedition specimen and its labels are available on-line at Flickr http://www.flickr.com/search/?user_id=127240649%40N08&text=Bactricia%20spp.

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